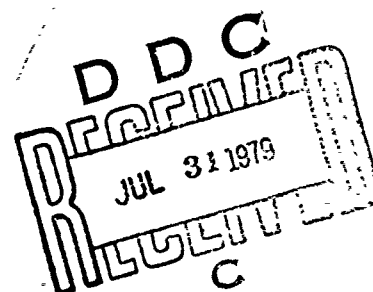


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Abstracts Of Master Of Military Art
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Theses And Special Studies
1977-1978
Annual Edition

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FOR THE COMMANDANT:

Gerald J. Carlson

GERALD J. CARLSON
Colonel, Infantry
Assistant Deputy Commandant

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HOW TO USE THIS BOOK

This edition brings together all abstracts of Master of Military Art and Science (MMAS) theses completed at CGSC from 1977-78. The subject section is designed to fit the areas of research emphasized by the MMAS student. Because of the primarily military thrust of the subject matter, headings such as "U.S. Army," "War," or "Combat" have been omitted in favor of more precise captions.

Some titles have been listed in several places in the subject section, as appropriate. The numbers following the subject heading correspond to the titles in the list of theses, by year of completion. Abstracts and the number of pages in the theses are found in the body of the volume.

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ABSTRACTS

282. MODELED METEOROLOGICAL INPUTS TO ENVIRONMENT DEPENDENT SIMULATION STUDIES, by Major Douglas A. Abbott.

A stochastic model demonstrates low-cost meteorological support to environment dependent simulation studies. Only the univariate problem is demonstrated, but extensions to multivariate applications are feasible. This application models atmospheric visibility. The model simulates time series at a given geographical point. A historically derived cumulative frequency distribution is converted to its equivalent normal deviate and fitted by a rational approximation. A Markovian time dependence is assumed. Seasonal and diurnal cycles are modeled. A run is initiated via a random draw from a unit normal distribution. Alternatively, an initial value may be specified. Subsequent values are generated using a time-correlation weighted linear combination of the prior value and a unit normal random input. This produces a Brownian Movement phenomenon within the appropriate probability density function. A given run tends to regress toward the climatological mean while exhibiting random fluctuations. A run of sufficient length recreates the probability density functions. Results presented verify model performance against historical data and include a few applications. The FORTRAN computer subroutine is published in an appendix.

283. U.S. MILITARY HAND GUNS: EXAMINATION OF LITERATURE FOR THE LAST TWENTY YEARS, by Major Robert J. Ament.

This paper attempts to consolidate and categorize the extensive literature available that relates to U.S. Army military hand guns, and to provide analysis of that information for future studies and decisions.

The literature search reveals that the usefulness of sources listed in priority is as follows: Defense Documentation Center, Air University Index, gun enthusiast magazines, and Readers' Guide to Periodical Literature.

Recommendations include questions for future efforts in the following areas: commercial hand guns, M1911A1 modifications, training, hand gun design, bullet design, manufacturing, multi-projectiles, machine pistols, costs, and microballistics.

284. TOW ENGAGEMENT IN THE ACTIVE DEFENSE -- 3000 METERS OR LESS?, by Lieutenant Colonel John R. Angolia, USA, 88 pages.

This research project is designed to examine the available evidence concerning what will be the probable effective engagement range or ranges for the tube launched, optically tracked, wire-command link (TOW) antitank guided missile system in the conduct of the defense in the Main Battle Area of Central Europe during the period 1978-1983.

This paper focuses on one dominant question - if, by virtue of the environmental and tactical limitations imposed on the TOW system, the antitank battle cannot begin at 3,000 meters, at what range or envelope of ranges will the TOW antitank battle probably become effective? In order to answer this question, this study concentrated on U.S. and Soviet technical and tactical publications, scientific terrain evaluations, interviews with tactical commanders and representatives of allied nations armed with the TOW, and a survey distributed among the 1977/78 Command and General Staff College student body and faculty.

The results of the investigation determined that, while some engagements may come at 3,000 meters or more, the preponderance of evidence would indicate that the probable effective TOW engagement range will fall between 1,500 and 2,000 meters. The factors of terrain, weather and combat obscuration will cause engagements between opposing forces to be frequently fought at very close ranges even though the TOW is capable of engaging at longer ranges.

285. IMPACT OF ELECTRONIC WARFARE ON TACTICAL PLANS AND TRAINING OF THE MECHANIZED INFANTRY BATTALION, by Major James M. Brogdon, IN.

The next battle is envisioned as a short, violent conflict of unprecedented destruction. The 1973 Middle East War rendered a vivid insight to that battlefield. To meet the challenges of the next battle, the U.S. Army began publishing a new series of "How to Fight" manuals in 1976 which address the doctrine of fighting future battles.

This study was initiated by a perceived shortfall in doctrine; that being a failure to adequately address the impact of electronic warfare (EW) on the maneuver battalion. Threat capabilities have been adequately documented, and the "Battle Captain" has been warned about the EW environment, but he has not been told how to effectively operate in the EW environment.

This thesis was conducted to determine the EW impact on tactical plans and training of the mechanized infantry battalion and to recommend solutions to shortcomings discovered.

Existing literature was examined to establish the present training preparation versus threat capabilities. Field manuals, training circulars, TRADOC publications, and the Command and General Staff College materials were used as the basis for research. Additionally, after action reports, field notes, and periodicals provided excellent source materials.

The conclusions derived from the study indicate that the EW impact on the battalion is awesome, but manageable. Many of today's problems result from decisions and events of the past decade; still other portions have developed and will continue to develop from actions of the Soviet Union to improve its already significant EW capabilities.

The only units capable of accomplishing their assigned missions will be those who have been trained and led by commanders operating in an environment where EW was fully integrated into the tactical plan and where latitude, trust, and confidence are extended to subordinates.

286. IMPORTANCE OF HUMAN RELATIONS IN LEADING TO CAREER SUCCESS OF US ARMY OFFICERS, by Major Melvin Alfred Butts, EN.

This thesis endeavored to determine if officers are sufficiently knowledgeable of, and adept in, human relations skill commensurate with the importance of human relations in leading to career success of Army officers.

Questionnaires were distributed to three distinct groups of Army officers. The groups were officers attending the Army War College (USAWC), the Army Command and General Staff College (CGSC), and Army Officer Advanced Courses. The distinguishing characteristic among the groups, for purposes of analysis, was their level of career success achieved. The USAWC group was presumed the most successful; while the Advanced Course group was presumed the least successful.

Questionnaire responses from the USAWC group were compared with responses from the other groups. Analyses of data revealed that the USAWC and CGSC respondents were significantly more knowledgeable of human relations techniques. These groups also considered human relations the most important leadership dimension. The Advanced Course group ranked human relations third in importance. A multivariate analysis revealed that respondents' ranking of human relations on importance was more a function of respondents' educational level than the level of career success they had achieved.

The findings substantiated that Army officer educational institutions do not devote sufficient time to human relations instruction commensurate with its importance. It was also found that there is a high incidence of incompatibility between Army commanders' leadership styles and the level of effectiveness of their units based on the Hersey-Blanchard Life Cycle Leadership Model.

287. TASK ORGANIZING FOR URBAN COMBAT, by Major James L. Campbell, USA, 123 pages.

This study presents guidelines on task organizing for urban combat. Eighteen examples of World War II urban combat were used to determine quantitative guidelines for planning a force of infantry, armor, engineers and artillery to be used in urban terrain varying from a small village to a large city.

Each historical example is first viewed in synopsis form describing the battle. The task organization used is then presented. Conclusions about the task organization are stated for each historical example.

The quantitative data on task organization and urban population are then tabulated and plotted versus each other. Graphs depicting the ratio of armor to infantry, engineer to infantry and artillery to infantry are displayed. Further analysis is presented on the ratio of these forces as part of a total maneuver force.

A methodology is presented to permit the task organizer to structure a force for any type of urban terrain with the proper number of engineers, artillery and armor units for a given infantry force.

288. THE HIGH SCHOOL GRADUATE, AN INDICATOR OF A QUALITY MARINE?, by Major C. W. Cheatham, USMC, 68 pages.

This study examines the value of the high school graduate as a quality indicator for identifying young men for enlistment in the Armed Forces. The primary interest of the study is directed toward the young men who would be able to successfully complete their first enlistment in the Marine Corps and the effect a high school diploma has on their success.

The study investigates the effects of a high school education as it pertains to abnormal attrition, disciplinary problems, and job performance in the military. Comparisons are made between servicemen with high school diplomas and enlistees who are less educated at the time of their enlistments.

The study found that the best indicator of quality among servicemen was the completion of high school prior to enlistment. High school graduates were found to have lower attrition than recruits of other educational categories; however, age was a determining factor for all categories. The recruits who were of the minimum age for enlistment, 17 years old; and the older men, 21 years or older, had higher attrition rates.

The high school graduate was involved in fewer disciplinary problems than the non-high school graduate within the Marine Corps. As the percentage of high school graduates rose, the rate of disciplinary problems decreased. The mental aptitude of individuals was determined as having little effect on the disciplinary problems in the Armed Forces.

Individuals who had completed high school were found to be more productive and trainable than other servicemen. The high school graduate had a higher completion rate at formal schools and their performance was recognized by promotions more often than the non-high school graduate. Special recognition for exceptional performance was meritorious promotion. The individual who had completed high school was more frequently meritoriously promoted.

The study concludes that the high school graduate is a quality indicator for enlistment and that the best candidate for enlistment in the Marine Corps is the high school graduate who enlists at an early age. The study suggests an enlistment contract that would benefit the Marine Corps by insuring that the highest quality personnel remain on active duty. The reserve forces would benefit from this new procedure because the trained personnel who elected not to remain on active duty would be required to join the active reserves.

289. THE ROLE OF THREAT AND TIME PERCEPTION IN INTERNATIONAL CRISIS, by Major Floyd V. Churchill Jr., USA, 144 pages.

This study explores the effect of two variables, threat and time compression, on the decisionmaking patterns of the senior decision units in selected international crises. The investigation is focused on an analysis of decisionmakers and their actions during two major crises of the twentieth century; the Greek crisis of 1947, and the US decision to intervene in Korea, 1950.

Investigation reveals that there are some common distinguishing characteristics of decision units under high stress and perceived limited time. Further examination develops a series of proposals for application of these findings to the particular needs of the military.

290. MILITARY POLICE AUTHORITY OVER CIVILIANS--THEY LOOK LIKE POLICE, THEY ACT LIKE POLICE, BUT ARE THEY POLICE?, by Major Dennis M. Corrigan, USA, 92 pages.

This study examines the legal authority of military police to conduct law enforcement activities in relation to civilians at military installations in the United States. The examination focuses on the lack of statutory arrest power and the legal rationales of citizen's arrest, protection of government property, and installation commander's authority to maintain law and order.

The study establishes that the lack of statutory arrest power is a product of the historical notion that military personnel ought not to execute laws against civilians. Further, the legal rationales used to support current military police operations are inappropriate because they provide little guidance to military police; they are neither legally nor logically sound; and, they do not provide for effective criminal prosecutions by permitting military police violations of civilians' constitutional rights and unwarranted tort litigation.

The study concludes by proposing statutory language providing military police law enforcement authority. This proposal satisfies current notions of appropriate civil-military relationships. It also permits effective and uniform law enforcement at military installations by providing specific guidance to military police, thereby avoiding violations of the Bill of Rights with concomitant civil and criminal litigation.

291. A LOGICAL APPROACH TO DECISIONMAKING FOR THE BATTALION COMMANDER ON THE MODERN BATTLEFIELD, by Major Frank E. Duncan, USA, 95 pages.

The decisionmaking process is affected by two distinct sides. The first is a factual, logical process which will produce a result completely void of human emotion. The second is an emotional, psychological process which although affected by logic and fact, causes occasional erratic, irrational behavior on decisions.

This thesis examines both sides of this decisionmaking process but attempts to offer recommendations on only the logical, factual portion. Emotion and psychological factors have an effect on every decisionmaker. One can easily conclude that if all possible facts are available to the decisionmaker, the decision will be better, more effective and less emotionally involved.

A reference book which includes all available decisionmaking methods should be developed which is indexed both alphabetically and by task. When possible, methods should be included as appendices to the reference book. References to doctrine, tactics and philosophy should include where the information can be found. Inclusion of all information would make the size of the document prohibitive. Careful screening of all information available will eliminate redundancy and decrease the size of the document.

The purpose of this thesis is to prove the need for such a document. The scope of preparation for this document would require DA approval and support.

292. DETERMINING THE NEED FOR A UNIFIED COMMAND ARMY SERVICE COMPONENT IN PACOM, by Major John S. Ellison, USA, 114 pages.

This study examines the doctrinal requirement for a unified command service component. The historical and descriptive methods are used in this case study of Pacific Command service components. Although the functional approach predominates, comparative analysis is used as well as a descriptive survey to determine the attitudes of officers that have served in the unified command structure.

The thesis evaluates the historical evolution of service components from World War II through the post Vietnam period. The role of a service component in joint doctrine is explored, as is the organization and functions of the US Army Pacific, the US Army CINCPAC Support Group, the US Pacific Air Force, and the US Pacific Fleet. Functional analysis of these headquarters provides the basis for discussion of further change.

The study concludes that unified command Army service components have historically performed primarily logistical and administrative functions, and are no longer necessary. It recommends that 1) joint doctrine be revised to eliminate service components, 2) military departments be tasked to provide a service headquarters to exercise command over operational forces, and 3) staff support functions of a service component be absorbed by a restructured unified command headquarters.

293. OPTIMIZING THE COST EFFECTIVENESS OF MILITARY CORRECTIONS; AN ASSESSMENT OF PROGRAM EVALUATIONS AND RELATED DATA, by Major Paul S. Embert, Jr., USAF, 132 pages.

Military corrections, spawned as the result of problems in penology, is currently affected more by its place in the military than by its niche in corrections. Austere resources and the transition to an all-volunteer constabulary force have focused attention on correctional expenditures. However, prior inquiries have focused on the costs of confinement, while ignoring alternative means of handling offenders and often conflicting correctional goals.

This study attempted to identify possible changes to the overall military corrections system and determine which are cost effective and feasible. Methodologically, the research entailed ex post facto research, coupled with unstructured observations. Program evaluations and observations provided original data; assessments of evaluations allowed consideration of more material than was directly possible during the time allotted for the effort. Adoption of a crime prevention model and development of a correctional decision model provided structure to the research.

Investigation revealed that there are a variety of means whereby correctional expenditures can be decreased, without significant adverse consequences to society, military discipline, or criminal recidivism. These include adaptation of new correctional approaches and modifications within the existing system. Several other general and specific conclusions resulted in the formulation of a decisional matrix, which can be used as an aid in evaluating various correctional alternatives.

The inquiry also revealed a lack of a clearly defined correctional objective, which detracts from cost effective or cost benefit analyses of the options available to the military, as well as other issues warranting further exploration.

294. THE 1973 WAR: IMPLICATIONS FOR U.S. ARMY FORCES IN NATO, by Major Philmon A. Erickson, Jr., FA.

This thesis examines the origins of the 1973 Middle East War from a military perspective. It traces the development of the Israeli Defense Force doctrine and organization through the wars preceding that of 1973. The effects of certain political and military decisions on the ability of Israeli Forces to successfully meet an Arab attack are evaluated. The central region of NATO is then compared to the conditions surrounding the 1973 War in an attempt to identify any areas of similarity.

It concludes that Israeli Forces were unprepared for the attack launched in October 1973 due to faulty assumptions regarding the conditions necessary for an Arab attack. Due to the numerous fundamental differences between Middle East and Central Europe, any attempts to apply tactical lessons learned from a war in one region to the other must be done with caution. The major finding is that U.S. Forces must prepare for a Warsaw Pact attack based on the enemy's capabilities, without regard to preconceived ideas as to the enemy's intentions.

295. NIGHT OPERATIONS - THE SOVIET APPROACH, by Major Corbett M. Flannery, USA, 78 pages.

This thesis is an examination of Soviet ground force night operations, both from a historical perspective and from current doctrine and training accounts. The objective of this analysis was to determine if the Soviets can be expected to employ night operations in any future conflict, and if so, to what extent.

Historical accounts of Soviet operations during World War II reveal that night operations were an integral part of their offensive and defensive tactics. Current writings by Soviet military officials reveal that the reliance on night operations has not diminished.

Soviet ground forces today possess highly sophisticated night operational equipment, and their training programs reveal an extensive night training effort, possibly accounting for a full 40 percent of all individual and unit training.

Conclusions drawn from the analysis of Soviet doctrine and training are that the Soviets can be expected to conduct night offensive and defensive operations using motorized rifle and armor forces supported by artillery and engineer units. The night operation is considered to be a natural extension of the daylight assault and conforms to the Soviet tactics of surprise, shock, and relentless pursuit.

296. EYEWITNESS IDENTIFICATION, by Lieutenant Colonel Francis A. Gilligan, USA, 68 pages.

This thesis sets forth a methodology for the practicing attorney faced with a problem concerning eyewitness identification. It discusses sixth amendment rights since it was the focus in this area that brought eyewitness identification to the forefront. It determines whether the right to counsel exists and the content of the right. The thesis also deals with the fifth amendment rights and attacks based on this amendment. Another portion covers the most overlooked area concerning eyewitness identification, fourth amendment rights. Because the Supreme Court has focused on the right to counsel and the fairness of the lineup many have not considered how or when the suspect would be brought to the police station to stand in a lineup. Many miscellaneous problems are also examined.

297. THE CONTINUING REQUIREMENT FOR V/STOL IN THE CLOSE AIR SUPPORT ROLE, by Major Woody F. Gilliland, USMC, 63 pages.

The U.S. Marine Corps has been interested in V/STOL aircraft for over thirty years. The AV-8A, the world's first operational high performance JET-V/STOL aircraft, has been utilized by the Marine air-ground task force for six years. This study examines the current posture of V/STOL aviation and whether the Marine Corps' experience with V/STOL warrants a follow on to the AV-8A.

This study reviews the history of JET-V/STOL and the many concepts that have evolved over the years. The requirements for close air support are thoroughly discussed and the impact that V/STOL has had on those requirements is presented. The paper concludes with a discussion of Western world military employment concepts as well as those of the Soviet Union.

V/STOL, with its many applications, is presented as a viable concept for tactical aviation. This innovative concept has provided the ground commander, particularly in the area of close air support, a responsiveness through basing flexibility that heretofore did not exist. Despite the obvious advantages of V/STOL, research revealed that there is not complete agreement on the future of the concept. The author concludes that the military advantages offered by the V/STOL concept far outweigh any political or economic considerations that could delay or eliminate the program.

298. AN EXAMINATION OF THE EFFECT OF EXTERNAL INFLUENCES ON THE SOVIET NEGOTIATION POSITION IN POST 1962 ARMS CONTROL AGREEMENTS, by Major John C. Goertemiller, USA, 170 pages.

This study articulates the general hypothesis which states that the Soviet negotiating position in post-1962 arms control negotiations is affected to a measurable degree by factors which are normally considered to be

external to the military or arms control arena. After summarizing the progress in arms control agreements and the trend of Soviet negotiating positions, the study narrows its focus to the investigation of the effect of domestic factors on the Soviet negotiating position. The dependent variable in the analysis is the trend of Soviet negotiating positions as expressed by concessions and retractions in the negotiating processes which were concluded after 1962. The independent variable is the trend of development and progress, or lack thereof, in the agricultural sector of the Soviet economy. Agriculture was selected as the independent variable because the demand of society for agricultural products is perceived to be much less elastic than the demand for other products in the economy. The correlation of the negotiating position with the agriculture trend was shown by means of an SPSS program to be surprisingly weak, although positive in direction. The study breaks new ground and is intended to be the first in a series which will examine other variables not normally considered to be within the arms control arena.

299. THE ARMY ADMINISTRATIVE DISCHARGE SYSTEM, by Major Raymond A. Gosselin, USA, 65 pages.

This study attempts to determine if there is a need for change in the Army administrative discharge system. The study examines the administrative discharge system and contrasts it with the punitive discharge system. The examination focuses primarily on the perceptions of agencies and individuals from both government and public sectors and emphasizes the impact of the Vietnam War and its aftermath upon those perceptions.

Investigation reveals that the administrative discharge system has deficiencies which have resulted in the inequitable treatment of soldiers. Although contentions of inequity may be rejected by proponents of the current system, the Army Discharge Review Board and the federal courts have validated many of these contentions. Moreover, recent Congressional legislation has affected the discharge review process as it is conducted by the military services of the Department of Defense thus creating an expensive, time-consuming workload and raising doubts concerning the practicality of the administrative discharge system in its present form.

This study concludes that there is a need for change in the Army administrative discharge system. The proposed changes attempt to eliminate the causes of inequity and render the system compatible with the changing discharge review process.

300. JOINT ARMY/AIR FORCE PLANNING AND EMPLOYMENT OF ELECTRONIC COUNTERMEASURES, by Major James L. Hendrickson, USAF, 187 pages.

This thesis examines existing doctrine and procedures for the planning and employment of electronic countermeasures in support of joint operations in a mid- to high-intensity conflict. Both joint documents and component service documents are reviewed and consolidated into a plain language summary of the current joint planning, request, and employment system for ECM. The thesis then expands on existing doctrine and procedures to illustrate a possible ECM planning methodology, and ends with an evaluation of current doctrine and procedures.

Observations are made based upon the author's research, and recommendations for possible improvement to organization, training, doctrine and procedures are included for further study. On the basis of the thesis research, the author concludes that current doctrine and procedures are inadequate to provide timely and effective ECM support to joint operations in a mid- to high-intensity conflict.

The thesis includes eight appendices; six unclassified (glossary of terms, bibliography, command and control of ECM, EWIOC concept, SEWI group description, and BOLD EAGLE 76 test results); and two classified (U.S. Army/U.S. Air Force ECM capabilities, and USEUCOM ECM planning procedures).

301. USAF TRAINING FOR NIGHT CLOSE AIR SUPPORT, by Major Johnny M. Jones, USAF, vii + 101 pages.

The capability of the Air Force to support the land battle at night has historically been late in development and inadequate by most standards. This ineffectiveness has resulted from the attempt to use equipment intended for daylight missions by aircrews who were inadequately trained for the night operation. "Can do" aviators improvised tactics and eventually developed relatively successful night attack and close air support techniques. The need for better night equipment and specialized night training was identified after every conflict, but inadequate night training and equipment deficiencies still contribute to the reduction of night close air support capabilities.

If the Air Force is to be part of a credible deterrence, it must be perceived as having the capability to defeat an enemy whenever and wherever confronted. The capability to attack with accuracy at night remains a weak area. While the technology exists to improve that capability, the equipment is not employed in operational tactical aircraft, and tactical fighter pilots are not adequately trained for the night ground attack mission.

In the light of the increasing threat to the North Atlantic Treaty Organization and the night doctrine and capabilities of the Warsaw Pact, a reevaluation of air power priorities is required. Even more important, pilots who are tasked for close air support must be better trained, and their aircraft must be better equipped to destroy enemy armored targets rapidly and effectively during the night attack.

302. **HARDWARE REQUIREMENTS FOR HELICOPTER AIR-TO-AIR WEAPONS IN THE 1980s**, by Major Walter J. Lash II, USA, 107 unclassified pages; 45 classified (appendix).

In view of the Soviet's advancement in combat helicopters, it is clear that a need exists for a self-defense capability for U.S. helicopters. This thesis examines the current Soviet threat, the current direction in developing and fielding an air-to-air weapon system and the emphasis in helicopter employment and operations in the NATO environment.

As part of the growing lethality of the battlefield, aircraft survivability equipment is also examined to validate their need in this environment, as well as, assess their impact on self-defense weapons. This survivability equipment is required for helicopters to operate within the significant air defense network portrayed, and their development must be carefully monitored to compliment the aircraft weapons systems.

This thesis recommends the integration of a family of weapons (guns, TOW and STINGER) on the Attack and Scout Helicopter that would collectively and mutually counter the Soviet threat. The air-to-air weapons in the 1980s must be capable of more than a single role, and both guns and missiles must be developed to operate in various modes and interface with air-to-surface weapons requirements. In view of the critical role of the Attack Helicopter Team, a family of weapons which provide mutual support to one another is the only realistic approach to this problem. But one fact remains, the lack of an effective air-to-air system must be corrected immediately, and future systems must evolve from the current development programs underway. That is, of course, if the United States Army wishes to remain the world leader in helicopter operations.

303. **THE DEPARTMENT OF DEFENSE'S ALTERNATE ENERGY POLICY**, by Major William J. Lucas, USAF, 70 pages.

This thesis examines the question of the scarcity of petroleum-based fuels early in the Twenty-first Century and the DD policy and programs to meet this shortage. Based on the fact that petroleum fuels as we know them will not be available early in the Twenty-first Century, this study examines the uniqueness of the DD's world-wide mission and its dependence on petroleum fuels for its main weapon systems. Because of this uniqueness, it was

concluded that the DD needs an alternative fuels policy independent of other governmental agencies to meet the national security requirements. The current DD policy on alternative fuels for the future is examined. This investigation revealed that, as of January 1978, the DOD did not have a comprehensive policy for alternative fuels. Further, the direction of Research and Development efforts has suffered as a result of this lack of policy. Lastly, the study offers a proposed policy for consideration. Recommendations for both short- and long-range goals are proposed. Conclusions were that an alternative fuels policy is absolutely necessary and that a policy needs to be established as soon as possible.

304. THE AVIATION CAREER INCENTIVE ACT OF 1974: AN ANALYSIS OF SHORT-RANGE RESULTS IN THE UNITED STATES AIR FORCE, 1974-77, by Major Kenneth E. McAlear, USAF, 87 pages.

This study analyzes the effects of the new flight pay system embodied in the Aviation Career Incentive Act of 1974 as it applies to rated Air Force officers. The analysis examines data on attraction, retention, cost, and workability of the gate system in an effort to determine if the Act is meeting its goals and objectives. This paper also discusses inequities in flight pay systems, past and present.

Analysis reveals that the Act is not the panacea that Congress thought it would be. Attraction to a flying career, while still not a problem, has apparently not been affected by the Act. Retention of young pilots and navigators has not improved appreciably, if at all, since passage of the Act. Costs for flight pay in the Air Force have gone down, but so has the size of the force. While most rated officers are currently meeting their rates, this may not be indicative of future results due to liberal, implementing, credit policies and the gradual decline of flying opportunities. While this analysis is based on a short period of time, the results indicate a need for close monitoring and reexamination of the flight pay system by the U.S. Air Force.

305. OIL AS A STRATEGIC WEAPON, By Captain James L. McAuliffe, USAR, 63 pages.

In October 1973, the Organization of Arab Petroleum Exporting Countries (OAPEC) curtailed oil production and embargoed oil shipments to those countries they perceived as sympathetic to Israel--the United States, Western Europe and Japan. In order to regain the needed oil, the OAPEC demanded a cessation of aid and support to Israel and a more active backing of the Arab cause. By the time the political crisis had subsided, the majority of the industrialized countries had not only censured Israel, but were actively courting the Arab countries to insure security of their future oil supplies.

This was not the first time oil producers had attempted to use oil as a political or strategic weapon. Since the end of World War II, there have been at least three previous, albeit unsuccessful, efforts to influence other countries or multi-national companies using either the threat or the actual withholding of oil. This thesis examines the oil crises situations of Iran in 1951, the Suez Canal in 1956, and the embargo of 1967, in addition to the more recent oil crisis of 1973.

The primary differences discovered between the 1973 situation and previous crises were: 1. In 1973, the Arab producers were able to act in concert to reduce oil production and to embargo. 2. They had a recognizable and mutually agreed upon objective. 3. The OAPEC had achieved a position of economic strength by 1973 and could afford to reduce their income from oil without damage to their economies. 4. The other oil producers not participating in the 1973 curtailment and embargo could not make up the oil shortfalls caused by the OAPEC as had occurred in past oil crises.

One of the major points to come out of this study was that there were two separate events occurring concurrently during the fall of 1973 and the spring of 1974. The first was discussed above--the political actions by the members of the OAPEC. The second was economic--the great increase in the price of oil by the Organization of Petroleum Exporting Countries (OPEC). The OPEC had been trying since 1960 to increase the price of oil with only moderate success, until 1973. The OPEC representatives were negotiating a price increase with the major oil companies in Vienna without much success when the fourth Arab-Israeli war broke out in October 1973. Shortly after the OAPEC announced the curtailments and embargo, the OPEC announced a doubling of the posted price per barrel of oil and by the time the political crisis had ended, the price of oil on the world market was four times the September 1973 price.

The study concludes that oil as a strategic weapon is effective in coercing other countries to do one's will. It will continue to be effective so long as the industrialized nations depend on oil imported from irreplaceable sources like the OAPEC members.

306. TOPOGRAPHICAL INTELLIGENCE AND THE AMERICAN CIVIL WAR, by Major Daniel D. Nettesheim, USA, 101 pages.

This study analyzes the organizational approaches to meet topographical intelligence needs which evolved in the major Federal armies during the war. Research reveals that a topographical problem existed in 1861 which had significant impact on Federal operations early in the war. The primary cause of inadequate military maps was the focus of the Corps of Topographical Engineers from 1816 to 1860. National leaders, as well as many Army generals and the military engineers themselves, supported strong emphasis on civil works and internal improvement.

The nature of the war placed a premium on the North's need for maps. The geographic size of the theater and strategies of opposing commanders were key factors in determining the necessary degree of map detail. Three distinct approaches to the map problem emerged. In the East where large-scale maps were most important, little was accomplished by the Army of the Potomac as engineers were horded on the army-level staff and employed without functional distinction. This approach was consistent with precedence and pre-war doctrine.

In the West, Grant decentralized his meager engineer assets in the Army of the Tennessee. His directives fostered centralized control and engineer focus on map work during critical phases of his campaigns with favorable results. Only the Army of the Cumberland developed a formal topographical organization extending from army to brigade level. Its system, with specialization as the cornerstone, was clearly superior to those of the other armies. Ironically, the formal merger of the two engineer corps in 1863 masked the system and reasons for its origin and success, many of which transcend the American Civil War.

307. THE AIR SUPERIORITY BATTLE IN THE MIDDLE EAST 1967-1973, by Major Clarence E. Olschner, III, USAF, 103 pages.

This paper is an historical study of the strategy, tactics, and weapons employed by Israel, Egypt, and Syria in the battle for air superiority from 1967 through 1973. The study is developed chronologically beginning with the 1967 War, through the War of Attrition, and ending with the cease-fire in the 1973 War. It has been compiled from an extensive review of unclassified, primarily secondary, unofficial sources.

The paper concludes that, in a mid-intensity war with modern air forces and air defense forces:

1. The achievement of strategic, tactical, and/or technological surprise can significantly influence the battle for air superiority.
2. Missiles have demonstrated the capability to significantly influence the air superiority battle in surface-to-air, air-to-air, and air-to-ground operations.
3. Air superiority can be achieved over the modern battlefield only by defeating both the surface-to-air and air-to-air capabilities of the enemy.
4. The achievement of air superiority over the battle area requires the combined efforts of air and land forces of which long range artillery may be the most effective weapon for the suppression of surface-based air defenses.

308. THE GOAL OF MOTIVATION IN THE MILITARY: SOLDIER SATISFACTION OR SOLDIER PERFORMANCE?, by Major Allison C. Patterson, USA, 89 pages.

Most studies to date dealing with worker motivation have concentrated on worker satisfaction, since most managers and researchers apparently assume a positive correlation between worker satisfaction and worker performance. This study was designed to by-pass this assumption and determine the correlation between the junior enlisted soldier's (E-1 through E-4) perceptions of 18 job-related factors, his/her level of performance and his/her level of absenteeism (AWOL). Again, this study approaches only the level of response-performance-AWOL correlations with no attempt at supporting or refuting the satisfaction-leads-to-performance assumption.

Analysis revealed:

- o A positive correlation between level of response and performance.
- o Considerably higher response-performance correlation for Combat Arms and Combat Service Support than for Combat Support.
- o No overall correlation between level of response and AWOL. However, further analysis revealed a negative correlation between AWOL and three out of four factor sub-scales.
- o A negative correlation between level of performance and AWOL.

309. AIRCREW SURVIVAL WEAPON USE: WORLD WAR II DATA BASE, by Major Robert M. Penney, USAF, 75 pages.

The United States Air Force (USAF) issues individual weapons to aircrew members involved in combat operations. The primary purpose of these weapons is to assist downed aircrew survival efforts. This study provides a historical data base for use in determining specific survival weapon requirements for any future armed conflict in Western Europe.

Five hundred fifty-seven successful World War II evasions are included in the data base. None of these evadees actually fired a weapon for any survival purpose. However, many evadees reported situations when a weapon, properly designed for the role, would have benefited their survival.

The most frequently encountered potential use of a weapon was to kill small game or birds for food. Next, in frequency of occurrence, was the potential for psychological benefits to be gained by possession of a weapon. The third most frequently encountered potential use was for coercion. The least frequently experienced potential use was for self-defense. No situations were reported in which a weapon would have been useful for any other survival purposes.

Data from World War II was compared with current USAF survival and evasion policy. This study includes recommendations for new weapons and ammunition and for modification of aircrew training procedures.

310. REHABILITATION OF USDB INMATES: A FRESH LOOK, by Major William C. Peters, USMC.

The future of the United States Disciplinary Barracks (USDB) and the Army Corrections Program is under debate. One side argues that the USDB is archaic and too expensive to maintain. The other argues that the USDB is needed to provide the rehabilitative programs for the long term inmate and that the USDB could become self-sustaining with an expansion of industry.

This study compares and contrasts the current populations and rehabilitation programs of the USDB and the Teen Challenge Program to determine whether the techniques and services, espoused by the Teen Challenge Program, could apply to or benefit the USDB.

To accomplish the cited task, the study describes the evolution of the penitentiary in America and the shift towards community-based corrections today; examines the values, perceptions, and keys toward rehabilitation; analyzes the rehabilitative programs of the USDB and Teen Challenge to determine strengths, weaknesses, and implications; and provides conclusions and recommendations concerning the implementation of the Teen Challenge community-based program at the USDB.

311. TACTICAL INTEGRATED AIR DEFENSE SYSTEM, by Major Michael C. Press, USAF.

Several significant events of the past decade have demonstrated the importance of tactical integrated air defense. These events include the air war over North Vietnam, the 1973 Middle East War, and the changes in Soviet offensive tactical air doctrine and capability. These three major events are examined and form the basis for a comprehensive assessment of the present United States tactical integrated air defense system (IADS).

The IADS assessment includes a study of IADS doctrine, organization, methods of control and integration, command and control equipment, weapons, and current joint training. The study concludes that the United States is inadequately prepared to conduct a tactical integrated air defense battle. Major deficiencies in all areas of the integration process are discussed.

Based on the foreseen importance of tactical integrated air defense in future wars and on the deficiencies in the present United States IADS, numerous recommendations are offered for improving IADS capabilities. The recommendations stress the need for increased Air Force/Army emphasis on tactical integrated air defense development in doctrine, equipment, weapons, tactics, and training.

312. HISPANICS IN ARMY ROTC: PROBLEMS IN RECRUITING AND COMMISSIONING, by Major James H. Proctor, Jr., USA, 160 pages.

This study attempts to determine why Hispanic cadets are not being commissioned in the same proportion as their enrollment in ROTC would suggest. Currently, Hispanics comprise four percent of the nation's ROTC cadets, yet only one percent of the Army's officers who received their commissions through ROTC. For background information, the revival of ROTC after its turbulent history during the Vietnam war years is examined. The study then focuses on Hispanic participation in ROTC, data for which was obtained from a survey of the 37 ROTC units whose Hispanic cadets comprise 90 percent of the nation's total. The investigation concludes with a case study of ROTC in Puerto Rico.

Research reveals that the two ROTC programs in Puerto Rico constitute the majority of the nation's Hispanic cadets. Further investigation discloses that high cadet admission standards have not been maintained in Puerto Rico in order to meet high ROTC enrollment objectives. Cultural and linguistic problems which affect Hispanic cadets to a lesser degree elsewhere in the United States thus are exaggerated in Puerto Rico. The subsequent high attrition and decreased competitiveness of Puerto Rican cadets have resulted in fewer qualified officers being commissioned. This, in turn, has decreased Hispanic officer production nation-wide.

313. AN ALTERNATIVE MARINE CORPS, by Major J. K. Rider, USMC, 91 pages.

In 1976, Martin Binkin and Jeffrey Record published the book, Where Does the Marine Corps Go From Here? Their basic premise was that there is no longer a need for the Marine Corps amphibious capability of the current magnitude. One of the alternatives they proposed was to reduce this capability by converting an existing Marine division to an airborne division. This same proposal would also deactivate another Marine division and supporting units.

The study analyzed the proposal from two points: was it cost effective and would it leave the United States in a less responsive defense posture? An analysis of the proposal uncovered too many unanswered questions, too many important variables had not been considered. Quantitative costs of the proposal had only been partially covered, qualitative costs had not been addressed. The proposal from that aspect alone was not cost effective. Further, the study determined that, contrary to the authors' claim, the proposal would weaken the United States defense posture in two ways: by assigning the airborne mission to the Marine Corps which has minimal airborne expertise or logistical base to adequately ensure its accomplishment; and of greater impact, adoption would reduce our current amphibious force by two-thirds, making it relatively unresponsive for meeting crises throughout the world.

It is a proposal that warrants far more detailed examination than the authors have afforded it. Thus, the final results were not intended to be solutions but rather areas for further study and investigation.

314. UNITED STATES/SOVIET UNION STRATEGIC ARMS LIMITATIONS: A STUDY OF ARMS CONTROL AND STRATEGIC STABILITY, by John P. Rose, Major, U.S. Army.

The purpose of this study is to discuss the role of arms limitations at the strategic nuclear level between the United States and the Soviet Union as it contributes to arms control in general and to strategic stability in particular. This approach to arms control/arms limitations is not designed to be technical in nature. To judge the usefulness of past and on-going strategic arms limitation talks, a conceptual framework through which one can assess the utility or non-utility of arms control measures is discussed.

In assessing arms control and strategic stability this study examines U.S. strategic goals and objectives; the rapid and continuous growth of Soviet strategic nuclear force capabilities; the SALT I agreements; the objectives/utility of strategic nuclear forces in both a military and political sense; the strategic nuclear balance; and the utility of follow on strategic arms agreements.

The hypothesis of this study suggests that instead of enhancing strategic stability and promoting moderation of competition in strategic armaments, the SALT I accords and post SALT I Soviet behavior illustrates what may be a quest for Soviet strategic superiority rather than parity and a mobilization for war rather than detente and peaceful co-existence.

315. THE EVOLUTION OF THE AMERICAN LIGHT FIELD GUN, By Major Wallace J. Savoy, USA, 102 pages.

This study consists of a historical sketch of the developments of the light field gun from 1865 to 1940. The research focused on the developmental process and the factors of foreign influence, economic constraints, technical developmental problems, and the influence of changing tactical doctrine.

The investigation reveals that the materiel development process during this period was a cyclic process, governed by military threat and economics. The development of the light field gun exemplifies the process of modernization of American field artillery at that time. In the interwar period after 1918, progressive development of the light field gun was constrained by two factors: a lack of mutual understanding between Ordnance and Field Artillery agencies as to the specifications of developmental materiel, and the lack of procurement funds for modern weapons. With the exception of a split trail carriage, the last field gun used by the Army was essentially

the French Model 1897 gun which had been developed in 1897. The light gun became obsolete because of changing tactical doctrine during the interwar period and was replaced with the light field howitzer in 1940. The current trend of field artillery development has been relatively static since World War I.

316. SPECIALIZED UNDERGRADUATE NAVIGATOR TRAINING FOR WEAPONS SYSTEMS OFFICERS, by Major Nolan W. Schmidt, USAF, 165 pages.

This study is an analysis of the benefits and constraints associated with implementing Air Training Command's proposed specialized Weapons Systems Officer (WSO) training concept in the U.S. Air Force Undergraduate Navigator Training (UNT) program. The investigation defines the costs of the proposed program in both UNT and advanced courses, analyzes the impacts on aircrew readiness, and explores the personnel resource management constraints which would result from a departure from current "universally assignable" concepts of managing aircrew personnel.

The general conclusion of this study is that specialized training offers potential cost savings in training WSOs to the current minimum levels of proficiency and that these savings may be reinvested in operational training programs to increase proficiency over that achieved under the current program. Additionally, the study reveals that the potential adverse management consequences can be accommodated.

317. A COMPARATIVE POLICY-PROCESS APPROACH TO VIETNAM INTERVENTION, by Major Charles R. Scribner, USA, 228 pages.

This thesis provides a comparative policy-process perspective of Vietnam intervention. It is comparative in the sense that the Eisenhower administration's policy process in the 1954 Indochina crisis is used as a basis to compare the Johnson administration's policymaking which led to intervention in 1965. The study's analysis centers on the policy processes of the two administrations and how the differences in their policymaking contributes to the explanation of the opposite decisions on military intervention.

The study's conclusion is that the Johnson policy process was comparatively exclusionary and, as a result, not effective in formulating Vietnam policy. In comparison to the more open Eisenhower policymaking, in the Johnson administration, dysfunctional policymaking elements are identified in the executive bureaucracy, the role of the President, other policy makers, and Congress. As a result, the policy process did not sustain a thorough evaluation of the alternatives and the cost of being an intervenor.

The major impact of the study is to provide another approach to the analysis of Vietnam policy and further the understanding of why the United States resorts to force in foreign affairs. It should stimulate further study of the policy process and its application to future interventionist policy development.

318. MID-RANGE PLANNING AND PROGRAMING AT THE U.S. ARMY COMBINED ARMS CENTER, By Major Robert D. Shadley, USA, 80 pages.

It is essential for the U.S. Army Combined Arms Center to plan 2-5 years in the future in order to ensure fully integrated and funded programs are a reality in the future.

The author identifies 45 circumstances which, if they exist within an organization, may preclude effective planning. By surveying the principal mid-range planners at the Combined Arms Center (CAC), reviewing organization goal/objective statements, and reviewing formal documented plans, it was determined which of these 45 circumstances exist.

The principal conclusions reached with regard to goals/objectives are: (1) All organizations within CAC have goals/objectives; however, (2) these goals/objectives are not placed in hierarchy by priority, and (3) mission activities require more guidance from higher management in order to develop goals/objectives.

The main conclusions reached vis-a-vis actual planning are: (1) There is very little mid-range planning being done; (2) the planning which is being done is primarily mechanical, and too short-ranged; and (3) better coordination of plans is needed.

It is also found that: (1) Planning is not inhibited by the CAC organization structure, and (2) turnover of personnel is a problem if action is not taken to "phase" the replacement cycle.

The author identifies the reasons for these problems and makes several recommendations which, if implemented, will alleviate the problems identified.

319. TOWARD THE ARMY OF THE 1980s: A STUDY OF MALE ATTITUDES OF WOMEN AS COMBATANTS, by Major Dorothy E. Spencer, USA, 349 pages.

This study reflects attitudes of students of the CGSC Class of 1978 toward the issue of women in combat. A sample of the class responded to 57 questions which included demographic discriminators, positive and negative social role perceptions and personal assessments on hypothetical performance situations concerning women as combatants. This study examines the various

relationships between contemporary and traditional mind-sets since they may influence future policy development. The degree of dependence varies among the major variables of social beliefs, gender-role perceptions, mind-sets, and job appropriateness, in comparison to specific criterion items. This research is restricted to tests of the significance and strength of these interrelationships compared with their position along an attitude scale continuum.

The sample generally expressed favorable, contemporary attitudes concerning egalitarian social beliefs without reservations; however, traditional beliefs were expressed in response to the controversial combat criterion questions. The findings provide evidence that the issues of readiness and women as combatants are strongly related to the major variable of role perceptions; fairly strongly related to mind-sets, and moderately related to job appropriateness. Social beliefs were not significantly related to any other major variable in this research. The strongest relationship shown in this research was between role perceptions and military readiness. The predictive validity of the hypotheses was enhanced by the results of these relationships. Generally, the preselected criterion questions revealed very low correlations between selected demographic variables and social beliefs as well as job appropriateness. The findings show the importance of considering personal and situational factors when evaluating attitude variables correlated with status variables (i.e., source of commission and major military experience) as well as role perceptions and mind-sets. Conclusions as well as implications for future research are presented.

320. ENGAGEMENT OF CONCEALED TARGETS WITH SMALL ARMS, by Major Aubrey B. Stacy, USA, 58 pages.

This study is designed to determine the need for concealed target training with small arms for infantrymen. The investigation is focused on an analysis of historical experience, current doctrine, and the psychological impact of concealed targets at the small unit level.

The investigation reveals that concealed targets are the predominant form that personnel targets assume on the modern battlefield, confirmed by both historical evidence and U.S. Army doctrine. Psychologically, the transition from TRAINFIRE ranges to most combat situations is lacking. Concealed target training using live ammunition under realistic conditions offers the potential of advancing combat effectiveness, as well as eliminating a large percentage of initial combat casualties. Psychologically, it will prepare the soldier to respond confidently to his first combat experience.

321. FIELD EXPERIMENT-COMPUTER MODEL INTERFACE: AN INFORMATION FLOW APPROACH, by Major John R. Statz, AR, 123 pages.

Results obtained from field experiments and computerized combat simulation models are among the most important sources of data used by combat developers to design the Army of the future. Ideally, field experiments should provide combat developers with data concerning human interactions with new equipment, new tactics and new training techniques. These data would then be used as inputs to combat models for sensitivity analyses and force optimization studies. On the other hand, exploratory tests could be run on computer models to assist in field experiment design. Unfortunately, this is not always the case.

This thesis discusses this problem, which evolved from the separate development of the Army's more important models and field experiments, and then demonstrates the lack of a common data interface between them. A data scheme is proposed that will help solve the interface problem, particularly for future experimentation and model improvement work. The type of data to be collected are defined, and their sources are identified, using common Army planning and training tools. A technique is then developed that helps describe the more important events underlying combat processes. Finally, an example problem is given that demonstrates the use of the technique by interfacing the data obtained from a reconstructed trial from the TETAM field experiment with the DYN TACS combat simulation model.

The methodology developed in this study supports future efforts to improve combat models through field experimentation.

322. TACTICAL FIGHTERS IN EUROPE: MULTI-ROLE OR SINGLE MISSION?, by Major Stephen B. Steele, USAF, ix + 139 pages.

The problem addressed in this thesis is whether United States tactical fighter forces in Europe should train and equip for a multi-role capability or specialize in aircraft and training for a single mission. This question is extremely relevant as the United States Air Force is currently modernizing its fighter fleet by replacing the aging F-4 multi-role aircraft with the A-10, F-15, and F-16 aircraft. The modernization process has just begun in Europe and will continue through the mid-1980s.

The relevancy of current and projected force mixes and training doctrine was examined by focusing on effectiveness of the multi-role/single mission concepts in the past, aircraft and training requirements that are peculiar to the European environment, the Soviet threat, and current and projected United States fighter forces in Europe.

The study concludes that specialized aircraft such as the A-10 and F-15 are ideal in Europe, but new multi-role designs such as the F-16, based on air superiority design requirements, are also highly effective. Training, however, must be specialized to the maximum extent possible to increase aircrew proficiency and expertise to the point where the aircrew, the new technology aircraft, and the weapons are capable of blunting a major Soviet invasion in Central Europe.

323. CONFRONTATION: THE STRUGGLE FOR NORTHERN BORNEO, by Captain David Lee Watkins, MI.

From late 1962 through mid-1966, President Sukarno of Indonesia sought to gain control of East Malaysia, the northern portion of the island of Borneo, by a combination of political and military means. This process was called Confrontation. His efforts were successfully opposed by British Commonwealth forces under General Walter Walker. Upon assumption of command in Borneo, General Walker developed a concept of operation which included six "ingredients of success." These were: Unified Operations; Timely and Accurate Intelligence; Speed, Mobility, and Flexibility; Base Security; Domination of the Jungle; and Winning the Hearts and Minds of the People. The remainder of the campaign was essentially the effort to implement the six ingredients.

This thesis examines the struggle in northern Borneo with a view to determining whether the factors identified by General Walker were, in fact, the "ingredients of success." Background factors to Confrontation are discussed, followed by the political and military course of events. The six ingredients of success are then examined individually.

The investigation reveals that the six ingredients of success, particularly Domination of the Jungle, were in fact the keys to victory. Their implementation helped bring about the political events which led to the end of Indonesia's Confrontation with the Commonwealth.

324. THE DIVISION LOGISTICS MODULE G-4 PACKET, by LTC Leo F. Watkins, Jr., USA, 59 pages.

The purpose of this thesis project was to develop and to document the rationale associated with the development of the G-4 Packet of the Division Logistics Module. The Middle East War of 1973 forced recognition of the fact that the lethality and sophistication of the modern battlefield would necessitate significant changes in tactics, weapon employment and support concepts. A new series of wargames was developed by the Combined Arms Center to provide a more realistic tactical environment for commanders to use in exercising their skills, but initial analyses of the game results indicated that commanders were, in many instances, making decisions based on completely unrealistic logistical assumptions.

This thesis represents one of the packets developed as a part of the Division Logistic Module or DIVLOG and is designed to train, exercise and involve the G-4 element of the division or corps staff in the decision process and to insure that the tactical commander has the opportunity to make decisions with a full understanding of associated support considerations.

ABSTRACTS
OF
CLASSIFIED THESES

LIST OF CLASSIFIED SUBJECTS

Soviet Capabilities C37, C38

CLASSIFIED THESES

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C37. (S) THE SOVIET CAPABILITY TO EMPLOY SMOKE TO LIMIT THE EFFECTIVENESS OF U.S. ANTITANK GUIDED MISSILES, (U), by Major Robert A. Browning, USMC, 91 pages.

(U) This study attempts to determine the Soviet capabilities to employ smoke to limit the effectiveness of the TOW/DRAGON antitank guided missiles. The investigation is focused on a review of the historical uses of smoke by the Soviets, a nontechnical assessment of their present day capabilities, a review of their tactical smoke doctrine, and a threat assessment in regards to TOW/DRAGON.

(U) Investigation reveals that the Soviet capability to employ smoke poses a serious threat to the effective employment of TOW/DRAGON and that the U.S. lacks an adequate counter smoke doctrine to meet this threat. Further examination reveals that the development of a suitable counter smoke doctrine is the foremost task in attempting to reduce the impact of Soviet smoke employment. The conclusions contain several areas for further research in the development of a U.S. counter smoke doctrine.

C38. (S) THE SOVIET COMBINED ARMS ARMY SURFACE-TO-AIR MISSILE SYSTEMS (U), by Major Newton F. McCurdy, Jr., USA, 120 pages.

(U) This research project is designed to examine the available evidence concerning the air defense missile systems that may be found at the Soviet army level. This thesis is the result of the author's efforts to understand what air defense missile capabilities the Soviet combined arms army (CAA) will have organic to it in the event of hostilities.

(U) Specifically addressed herein are six areas that apply to each of the air defense missile systems: (1) organization; (2) equipment capabilities; (3) mobility capability; (4) possible deployment schemes; (5) electronic countermeasures (ECM) and (6) command and control. The thesis addresses the practical aspects of these areas rather than the highly technical aspects.

(U) The investigation of the available material indicates that there are definite strengths in Soviet air defense and there are also weaknesses that may be exploited in a Suppression Against Enemy Air Defense (SEAD) program. The thesis is classified SECRET/NOFORN/WNINTEL and a classified SI supplement is available from the Fort Leavenworth SSO.

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